

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US04/37656

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

- ☒ the international application in the language in which it was filed
☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing
☐ table(s) related to the sequence listing

b. format of material

- ☐ on paper
☐ in electronic form

c. time of filing/furnishing

- ☐ contained in the international application as filed.
☐ filed together with the international application in electronic form.
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

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Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application

☒ claims Nos. 73

because:

☐ the said international application, or the said claim Nos. _____ relate to the following subject matter which does not require an international search (*specify*):

☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 73 are so unclear that no meaningful opinion could be formed (*specify*):

Claim 73 is not listed in the claims.

☐ the claims, or said claims Nos. _____ are so inadequately supported by the description that no meaningful opinion could be formed (*specify*):

☐ no international search report has been established for said claims Nos. _____

☐ a meaningful opinion could not be formed without the sequence listing; the applicant did not, within the prescribed time limit:

☐ furnish a sequence listing on paper complying with the standard provided for in Annex C of the Administrative Instructions, and such listing was not available to the International Searching Authority in a form and manner acceptable to it.

☐ furnish a sequence listing in electronic form complying with the standard provided for in Annex C of the Administrative Instructions, and such listing was not available to the International Searching Authority in a form and manner acceptable to it.

☐ pay the required late furnishing fee for the furnishing of a sequence listing in response to an invitation under Rules 13ter.1(a) or (b).

☐ a meaningful opinion could not be formed without the tables related to the sequence listings; the applicant did not, within the prescribed time limit, furnish such tables in electronic form complying with the technical requirements provided for in Annex C-bis of the Administrative Instructions, and such tables were not available to the International Searching Authority in a form and manner acceptable to it.

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in electronic form only, do not comply with the technical requirements provided for in Annex C-bis of the Administrative Instructions.

☐ See Supplemental Box for further details.

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Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims <u>NONE</u>	YES
	Claims <u>1-72 and 74-97</u>	NO
Inventive step (IS)	Claims <u>NONE</u>	YES
	Claims <u>1-72 and 74-97</u>	NO
Industrial applicability (IA)	Claims <u>1-72 and 74-97</u>	YES
	Claims <u>NONE</u>	NO

2. Citations and explanations:

Please See Continuation Sheet

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

V. 2. Citations and Explanations:

Claims 1-72 and 74-97 lack novelty under PCT Article 33(2) as being anticipated by WO 00/50570.

WO 00/50570 entitled "Compositions and Methods for Modulating Growth or Differentiation of Growth Factor Dependent Cells" teaches on page 1 lines 20-24, extracellular matrix components. On page 4 last paragraph, growth factors are immobilized in a matrix separate from the cells. On page 19 various growth factors are listed and interactions between binding pairs are determined.

Claims 14, 46, 72 lack an inventive step under PCT Article 33(3) as being obvious over the combination of WO 00/50570 in view of WO 99/63329.

The claims differ from WO 00/50570 in that they specify a mesogenic layer is employed in detecting.

WO 99/63329 entitled "Optical Amplification of Molecular Interactions Using Liquid Crystals" teaches in the abstract, generating an optical signal with a mesogenic layer.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the mesogens as taught by WO 99/63329 in the method and devices of Kilburn for their known function with the expected result.

Claims 19, 20, 31, 32, 59, 60, 82, 84, 96, lack an inventive step under PCT Article 33(3) as being obvious over the combination of WO 00/50570 in view of US 2002/0172621.

The claims differ from WO 00/50570 in that they specify various formats of plates.

US 2002/0172621 A1 entitled "Device Having Microchambers and Microfluidics" teaches in paragraph 35, various format multiwell plates including 6, 12, 24, 48, 96, 144, 192, 384, 1536, 3456 and the like number of wells per plate.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the formats of plates as taught by US 2002/0172621 in the method and devices of WO 00/50570 for their known function with the expected results.

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In case the space in any of the preceding boxes is not sufficient.

Claims 4, 36, 63 lack an inventive step under PCT Article 33(3) as being obvious over the combination of WO 00/50570 in view of each of US 2002/0173033 and US 6,596,545.

The claims differ from WO 00/50570 in that they specify types of extracellular matrices.

US 2002/0173033 A1 entitled "Device and Method of Three Dimensional Spatial Localization and Functional Interconnection of Different Types of Cells" teaches in paragraph 83, extracellular matrices for supporting cells. In paragraph 103 the matrices are further defined.

US 6,596,545 entitled "Microdevices for Screening Biomolecules" teaches in column 3 lines 42-48, films containing components to react with cells. In column 8 the films are further defined.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the extracellular matrices of US 2002/0173033 and US 6,596,545 in the methods and devices of WO 00/50570 for their known function with the expected results.